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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|-------------------------|-------------------|
| 09/618,102 | 07/17/2000 | Richard S. Orr | 0918.0095C | 7328 |
| 7590 | 07/20/2004 | | EXAMINER | NGUYEN, VAN KIM T |
| Patrick Finnman, Esq. EPSTEIN, EDELL, SHAPIRO AND FINNAN Suite 400 1901 Research Boulevard Rockville, MD 20850 | | | ART UNIT | PAPER NUMBER |
| | | | 2661 | 13 |
| | | | DATE MAILED: 07/20/2004 | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------|-----------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/618,102 | ORR, RICHARD S. |
| Examiner | Art Unit | |
| Van Kim T. Nguyen | 2661 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 19 April 2004.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-43 is/are pending in the application.
 4a) Of the above claim(s) 2,8,26,34 and 42 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1,7,13-15,28 and 36 is/are rejected.
 7) Claim(s) 3-6, 9-12, 16-25, 27, 29-33, 35, 36-41, and 43 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

DETAILED ACTION

This Office Action is responsive to communications filed on April 19, 2004.

Claim Objections

Claims 33 and 41 are objected to because of the following informalities: It is not clear what “second groves” on line 2 of each claim are; however, in the interest of expediting the examination process, examiner will interpret the limitation as “second group”.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 36 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 36 is a single means claim, i.e., where a means recitation does not appear in combination with another recited element of means. *In re Hyatt*, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983) (A single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor.). When claims depend on a recited property, a fact situation comparable to Hyatt is possible, where the claim covers

every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 15, 29, and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Wildauer et al (US 5,903,555).

As shown in Figs. 1-7, Wildauer discloses evaluating (mapping) on a chip by chip basis a logic value of the input signals (in-phase data bits and quadrature data bits), and generating a single constant envelope output signal (power signal), a value of the single output signal being based on a function of the logic values of the input signals (col. 4: lines 51 – col. 5: line 8; col. 6: line 46 – col. 7: lines 59).

Though Wildauer does not explicitly specify a receiver for receiving from external source a set of chip-synchronous CDMA signal to be transmitted, but since Wildauer discloses a method employing limiting transmission band technique in a CDMA system comprising transmit and receiving station (col. 2: lines 56-61), it is inherent that the station must comprise a receiver for receiving CDMA signals from external sources.

Claim Rejections - 35 USC § 103

Claims 1, 7, and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art, in view of Honkasalo et al (US 6,064,663), and further in view of Wildauer et al (US 5,903,555).

As shown in Fig. 2 of the admitted prior art, the present IS-95 forward link waveform structure in a CDMA communication system has multiplicity of user data channels (Channel 1, ..., Channel N), comprising a baseband filter (16, 17) for baseband filtering the I and Q channels, a multiplexer (18, 19), and an upconverted (18, 19) for upconverting the baseband filtered signals and broadcasting the upconverted baseband filtered signals at RF.

However, the admitted prior art does not call for baseband filtering the I/Q channels after multiplexing by the common multiplexer.

As shown in Figs. 1-11, Honkasalo teaches baseband filtering (138, 346, 718, 721) the I and Q channels after multiplexing by the common multiplexer (122, 328, 706; cols 1-22).

Honkasalo also discloses a receiver (148) for receiving CDMA signal (col. 8: lines 37-40).

Since it is highly desirable to flexibly transmit varying rates of data in a CDMA telecommunications system, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Honkasalo's method of baseband filtering after multiplexed I and Q signals, motivated by the needs to optimize the use of existing system resources and the desire to satisfy different data transmission requirements.

The combination of admitted prior art and Honkasalo disclose a method of improving QoS in a spread spectrum, chip synchronous CDMA communication system comprising separately multiplexing the I and Q channels into two baseband signals; baseband filtering both baseband signals to produce baseband filtered signals; upconverting both baseband filtered signals to RF; combining both upconverted signals in quadrature at RF; and broadcasting the upconverted baseband filtered signals at RF.

However, the combination of admitted prior art and Honkasano does not call for separately multiplexing the I and Q channels into two separate constant envelopes.

As shown in Figs. 1-7, Wildauer teaches separately multiplex the I and Q channels into two separate constant envelopes (col. 15: line 37 – col. 16: line 55).

Since in theory, a constant power input signal would pass through a non-linear amplifier without distortion, it is desirable that the transmitted signals have nearly constant power to avoid spectral regrowth. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Wildauer's method of separately multiplexing the I and Q channels into two separate constant envelopes in the combination of admitted prior art and Honkasalo's system, motivated by the need to improve the overall quality of service and increase the power usage efficiency of the communication system.

Allowable Subject Matter

Claims 3-6, 9-12, 16-25, 27, 29-33, 35, 36-41, and 43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed April 19, 2004 have been fully considered but they are not persuasive.

Applicant argues that combination of the prior art, Honkasalo, and Wildauer fails to describe or suggest the claimed system and method since prior of Figure 2 and Honkasalo lack the claimed constant envelope multiplexer, and Wildauer addresses only one signal.

As shown above, the combination of prior art of Figure 2 and Honkasalo teaches a method of improving QoS in a spread spectrum, chip synchronous CDMA communication system comprising separately multiplexing the I and Q channels into two baseband signals; baseband filtering both baseband signals to produce baseband filtered signals; upconverting both baseband filtered signals to RF; combining both upconverted signals in quadrature at RF; and broadcasting the upconverted baseband filtered signals at RF, multiple signals emphasizes.

Though the combination of admitted prior art and Honkasano does not call for separately multiplexing the I and Q channels into two separate constant envelopes, but since a constant power input signal would pass through a non-linear amplifier without distortion, it is desirable that the transmitted signals have nearly constant power to avoid spectral regrowth. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Wildauer's method of separately multiplexing the I and Q channels into two separate constant envelopes in the combination of admitted prior art and Honkasalo's system, motivated by the need to improve the overall quality of service and increase the power usage efficiency of the communication system.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Hiramatsu (US 6,701,163); Resnikoff et al (US 6,553,080); McCallister et al (US 6,366,619); Resnikoff et al (US 6,298,099); and Hedberg et al (US 6,266,320).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Van Kim T. Nguyen whose telephone number is 703-305-7692. The examiner can normally be reached on 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Olms can be reached on 703-305-4703. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

vkn



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